UTAH ENERGY STATISTICAL ABSTRACT

Sixth Edition 1999

Office of Energy and Resource Planning

Jeffrey S. Burks, Director

Statistical Abstract Work Group

Thomas Brill, Natural Resource Economist F.R. Jahanbani, Senior Energy Analyst Glade Sowards, Natural Resource Analyst



More than 25 years ago, Arab members of the Organization of Petroleum Exporting Countries embargoed crude oil shipments to the United States and first raised energy issues to national importance. Since then, the urgency with which we view energy issues has wavered, but our understanding of the linkage between energy, the environment, the economy and our quality of life has increased. Today we recognize that energy production and use are key elements of Utah's economic development, environmental protection and quality of life goals.

The sixth edition of the *Utah Energy Statistical Abstract* gives Utah citizens access to data that will better inform them about issues in which energy plays a significant role. Publication of the abstract also meets the responsibilities of the Utah Department of Natural Resources under authority of the *Utah Code Annotated*, 1953, Section 63-34-5(2)(c)(iii), "... to coordinate and consolidate energy resource data collection throughout Utah state government."

The *Utah Energy Statistical Abstract* is a comprehensive, historical data series that covers all major energy activities. Such activities include reserves, production, distribution, consumption and prices for nonrenewable energy sources. Data on renewable energy sources are also included.

We invite you to use the *Utah Energy Statistical Abstract* to learn more about energy production and use in Utah.

Jeffrey S. Burks Director Utah Office of Energy and Resource Planning One of the objectives of the Office of Energy and Resource Planning is to provide government agencies, private industry, and the general public with timely, accurate and objective energy and natural resources data. To help meet this objective, we compile Utah-specific energy data from federal and state government, energy industry trade associations, energy companies and private information services in a single, comprehensive document: the *Utah Energy Statistical Abstract*.

The sixth edition of the *Utah Energy Statistical Abstract* is organized by primary energy source and each section lists historical and current data on reserves, production, consumption, distribution and prices. A glossary and table of equivalencies provide information on definitions, technical terms and thermal conversion units.

The *Utah Energy Statistical Abstract* is updated periodically as more current information becomes available. Updated tables may be found in spreadsheet and Portable Document Format (PDF) files available through the Office of Energy and Resource Planning web site at: http://www.nr.state.ut.us/energy/home.htm

To learn more about specific energy resources or to purchase the *Utah Energy Statistical Abstract*, contact the Office of Energy and Resource Planning at (801) 538-5428.

Contents

	Pa	ge
List of Fig	gures	ix
List of Ta	bles	хi
Energy R	eserves, Production, Distribution, Consumption and Prices	
1.0	Overview	1
2.0	Coal	27
3.0	Crude Oil and Petroleum Products	55
4.0	Natural Gas	91
5.0	Electricity	17
6.0	Uranium	51
7.0	Renewable Resources and Weather	59
8.0	U.S. Overview by State	59
Glossary		75
Table of I	Equivalencies	35

List of Figures

Overview	Pag	Įе
1.1	Utah Energy Balance, 1960-1997	_
1.2	U.S. Energy Production by Primary Source, 1960-1997	1
1.3	Utah Energy Production by Primary Source, 1960-1997	3
1.4	U.S. Energy Consumption by Source, 1960-1997	7
1.5	Utah Energy Consumption by Source, 1960-1997	9
1.6	U.S. Energy Consumption by End Use, 1960-1997	1
1.7	Utah Energy Consumption by End Use, 1960-1997	3
Coal		
2.1	Utah Remaining Recoverable Coal Reserves by Coal Field as of January 1, 1998 3	1
2.2	Utah Coal Production by County, 1960-1997	
2.3	Distribution of Utah Coal by End Use, 1970-1997	
2.4	Distribution of Utah Coal by Destination, 1997	
2.5	Utah Consumption of Coal by End Use, 1960-1997 5	
2.6	Utah End-Use Price of Coal, 1970-1997	
Crude Oil	and Petroleum Products	
3.1	Utah Proved Reserves of Crude Oil and Natural Gas Liquids, 1960-1997 5	9
3.2	Utah Well Completions, 1960-1997	
3.3	Utah Crude Oil Production and Total Proved Reserves, 1960-1997 6	
3.4	Utah Crude Oil Production, 1960-1997 6	7
3.5	Utah Crude Oil Production by County, 1997	
3.6	Utah Crude Oil Production by Landownership, 1960-1997	
3.7	Utah Value of Crude Oil, 1960-1997	
3.8	Utah Refinery Receipts of Crude Oil by State of Origin, 1960-1997	8
3.9	Utah Refinery Activity, 1997 8	1
3.10	Utah Consumption of Petroleum Products, 1960-1997	5
3.11	Utah Consumption of Petroleum Products by End-Use, 1960-1997 8	7
3.12	Utah End-Use Price of Petroleum Products, 1970-1997	9
Natural G	as	
4.1	Utah Proved Reserves of Natural Gas, 1960-1997	5
4.2	Utah Natural Gas Gross Production by County, 1997	9
4.3	Utah Natural Gas Total Reserves and Gross Production, 1960-1997 10	1
4.4	Utah Gross Withdrawal and Marketed Production of Natural Gas, 1960-1997 10	7
4.5	Utah Natural Gas Marketed Production by Landownership, 1960-1997 10	9
4.6	Utah Consumption of Natural Gas, 1960-1997	4
Electricity	,	
5.1	Largest Power Plants in Utah by Generator Nameplate Capacity as of January 1, 1998	0
5.2	Utah Net Generation of Electricity by Source, 1960-1997	0
5.3	Utah Cost of Fuel to Generate Electricity, 1970-1997	

List of Figures

Electricity	(continued)	Page
5.4	Utah Sales of Electricity by Class of Service, 1960-1997	. 137
5.5	Utah Price of Electricity by Class of Service, 1960-1997	. 139
5.6	Utah Expenditures for Electricity by Class of Service, 1960-1997	. 142
5.7	Utah Electric Utility Customers by Class of Service, 1960-1997	. 144
Renewable	e Resources and Weather	
7.1	Utah Cooling Degree Days, 1950-1997	. 164
7.2	Utah Heating Degree Days, 1950-1997	. 166

List of Tables

Overview	Page
1.1	U.S. Energy Consumption and Expenditures, 1970-1997
1.2	Utah Energy Consumption and Expenditures, 1970-1997
1.3	U.S. Energy Balance, 1960-1997
1.4	Utah Energy Balance, 1960-1997
1.5	U.S. Energy Production by Primary Source, 1960-1997 (Physical Units)
1.6	Utah Energy Production by Primary Source, 1960-1997 (Physical Units) 9
1.7	U.S. Energy Production by Primary Source, 1960-1997 (Trillion Btu) 10
1.8	Utah Energy Production by Primary Source, 1960-1997 (Trillion Btu)
1.9	U.S. Energy Consumption by Source, 1960-1997 (Physical Units)
1.10	Utah Energy Consumption by Source, 1960-1997 (Physical Units)
1.11	U.S. Energy Consumption by Source, 1960-1997 (Trillion Btu)
1.12	Utah Energy Consumption by Source, 1960-1997 (Trillion Btu)
1.13	U.S. Energy Consumption by End Use, 1960-1997 (Trillion Btu) 20
1.14	Utah Energy Consumption by End Use, 1960-1997 (Trillion Btu)
1.15	U.S. Residential Energy Prices, 1960-1997
1.16	Utah Residential Energy Prices, 1960-1997
Coal	
2.1	U.S. Demonstrated Coal Reserves by State and Mine Type, 1997 29
2.2	Utah Coal Reserves by Coal Field as of January 1, 1998
2.3	Utah Coal Reserves by County as of January 1, 1998
2.4	Utah Coal Reserves by Landownership as of January 1, 1998
2.5	U.S. Coal Production by State, 1994-1997
2.6	Utah Coal Production by Mines and Operators, 1997
2.7	Utah Coal Production and Miner Productivity, 1960-1997
2.8	Utah Coal Production by County, 1960-1997
2.9	Utah Coal Production by Coal Field, 1982-1997
2.10	Utah Coal Production by Landownership, 1980-1997
2.11	Distribution of Utah Coal by Principal State, 1970-1997
2.12	Distribution of Utah Coal by Method of Transportation, 1970-1997 42
2.13	Distribution of Utah Coal by State and Method of Transportation, 1997 43
2.14	Distribution of Utah Coal by End Use, 1970-1997
2.15	Distribution of Utah Coal by Destination and End Use, 1997
2.16	Distribution of Coal in Utah by End Use, 1960-1997
2.17	Utah Coal Supply and Distribution, 1970-1997
2.18	Utah Consumption of Coal by End Use, 1960-1997
2.19	Utah End-Use Price of Coal, 1970-1997
Petroleum	
3.1	U.S. Proved Reserves of Crude Oil and Natural Gas Liquids by State, December 31, 1997
3.2	Utah Proved Reserves of Crude Oil and Natural Gas Liquids, 1960-1997
3.3	Utah Exploration and Drilling Activity, 1960-1997
	1 0 7, 1 1111111111111111111111111111111

List of Tables

Petroleu	m (continued)	age		
3.4	Utah Crude Oil Drilling Activity by Well Type, 1960-1997			
3.5 Utah Well Completions, 1960-1997				
3.6 U.S. Crude Oil Production by State, 1994-1997				
3.7	Utah Crude Oil Production, 1960-1997			
3.8a	Utah Crude Oil Production by County, 1994-1997			
3.8b	Utah Crude Oil Production, Abandoned Production, and Cumulative Production, 1			
68				
3.9	Utah Crude Oil Production by the 25 Largest Fields, 1997	. 70		
3.10	Utah Crude Oil Production by the 25 Largest Operators, 1997	. 71		
3.11	Utah Crude Oil Production by Landownership, 1960-1997			
3.12	Utah Production, Price and Value of Crude Oil, 1960-1997			
3.13	Utah Crude Oil Pipelines, 1997	. 76		
3.14	Utah Refinery Receipts of Crude Oil by State of Origin, 1960-1997			
3.15a				
3.15b	Utah Refinery Activity, 1997	. 80		
3.16	Utah Petroleum Refining Capacity as of January 1, 1997	. 82		
3.17	Utah Petroleum Refinery Capacity Utilization, 1960-1997	. 83		
3.18	Utah Consumption of Petroleum Products, 1960, 1970-1997	. 84		
3.19	Utah Consumption of Petroleum Products by End Use, 1960-1997	. 86		
3.20	Utah End-Use Price of Petroleum Products, 1970-1997	. 88		
Natural		0.2		
4.1	U.S. Proved Reserves of Natural Gas by State, December 31, 1997			
4.2	Utah Proved Reserves of Natural Gas, 1960-1997			
4.3	Utah Natural Gas Drilling Activity by Well Type, 1960-1997			
4.4	U.S. Natural Gas Production by State, 1994-1997			
4.5a	Utah Natural Gas Gross Production by County, 1994-1997	. 98		
4.5b	Utah Natural Gas Gross Production, Abandoned Production, and Cumulative	00		
1.6	Production, 1997			
4.6	Utah Natural Gas Gross Production by the 25 Largest Fields, 1997			
4.7	Utah Natural Gas Gross Production by the 30 Largest Operators, 1997			
4.8	Utah Natural Gas Processing Plants, 1997			
4.9	Utah Natural Gas Plant Operations, 1997			
4.10	Utah Natural Gas Pipelines, 1997			
4.11	Utah Gross Withdrawal and Marketed Production of Natural Gas, 1960-1997			
4.12	Utah Natural Gas Marketed Production by Landownership, 1960-1997			
4.13	Utah Natural Gas Wellhead Price and Value of Marketed Production, 1960-1997			
4.14	Utah Dry Natural Gas Production, 1960-1997			
4.15	Utah Natural Gas Supply and Disposition, 1960-1997			
4.16	Utah Consumption of Natural Gas, 1960-1997			
4.17	Utah End-Use Price of Natural Gas, 1960-1997	115		

List of Tables

Ele	ectricity		Page
	5.1	The 20 Largest Power Plants in Utah, Ranked by Capacity as of January 1, 1998	. 119
	5.2	Utah Coal-Fired Electric Power Plants as of January 1, 1998	. 121
	5.3	Utah Petroleum-Fired Electric Power Plants as of January 1, 1998	
	5.4	Utah Natural Gas-Fired Electric Power Plants as of January 1, 1998	
	5.5	Utah Hydroelectric Power Plants as of January 1, 1998	
	5.6	U.S. Electric Utility Net Generation by Energy Source, 1997	. 126
	5.7	U.S. Electric Utility Net Generation by State, 1994-1997	. 127
	5.8	Utah Consumption of Fossil Fuels at Electric Utilities, 1960-1997	
	5.9	Utah Net Generation of Electricity by Energy Source, 1960-1997	. 129
	5.10	Utah Coal-Fired Electricity Generation by Plant, 1991-1997	. 131
	5.11	Utah Petroleum-Fired Electricity Generation by Plant, 1991-1997	
	5.12	Utah Natural Gas-Fired Electricity Generation by Plant, 1994-1997	. 133
	5.13	Utah Cost of Fuel to Generate Electricity, 1970-1997	. 134
	5.14	Utah Sales of Electricity by Class of Service, 1960-1997	. 136
	5.15	Utah Price of Electricity by Class of Service, 1960-1997	
	5.16	U.S. Price of Electricity by State, 1994-1997	. 140
	5.17	Utah Expenditures for Electricity by Class of Service, 1960-1997	. 141
	5.18	Utah Electric Utility Customers by Class of Service, 1960-1997	. 143
	5.19	Utah Electric Utilities, 1997	. 145
	5.20	Utah Electric Utilities Serving the Residential Sector, 1997	. 146
	5.21	Utah Electric Utilities Serving the Commercial Sector, 1997	. 147
	5.22	Utah Electric Utilities Serving the Industrial Sector, 1997	. 148
• •			
Ur	anium	II C. II	150
	6.1	U.S. Uranium Reserves, 1997	
	6.2	U.S. Uranium Exploration and Development Drilling, 1970-1997	. 154
	6.3	U.S. Uranium Market Activities, 1970-1997	
	6.4	Utah Uranium Ore and U ₃ O ₈ Production, 1960-1997	
	6.5	Utah Uranium Milling Capacity, 1997	. 15/
Re	newabl	e Resources and Weather	
	7.1	Utah Energy Saving systems Tax Credit, 1980-1995	. 161
	7.2a	Utah Estimated Renewable Energy Consumption, 1984-1997	
	7.2b	U.S. Estimated Renewable Energy Consumption, 1984-1997	
	7.3	Utah Monthly and Annual Cooling Degree Days, 1950-1997	. 163
	7.4	Utah Monthly and Annual Heating Degree Days, July 1949-December 1997	
T 7 4	S 0	view by State	
U.X		v	171
	8.1 8.2	U.S. Energy Consumption by State, 1997	
	8.3	U.S. Energy Consumption by State, 1997	
	0.5	U.S. AVEIAGE LIICIGY FIICES BY State, 177/	. 1/3